

Amendments to the Claims:

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A video encoding apparatus comprising motion compensation prediction means for ~~generating a predicted image of a coding target frame by dividing a~~ [[the]] coding target frame into a plurality of blocks, generating a prediction reference image that are formed by providing interpolated pixels which are produced by interpolation between integer pixels of a reference frame from integer neighborhood pixels in a predetermined region of the [[a]] reference frame, and generating a predicted image of the coding target frame by determining a motion vector for the prediction reference images for each of the plurality of blocks,

the motion compensation prediction means having:

complexity extraction means for extracting complexity information which indicates a degree of complexity of movement between said coding target frame and said ~~from~~ the reference frame for each of the plurality of blocks; [[and]]

filter storing means for preliminarily storing two low-pass filters with different high-frequency cutoff characteristics; and

predicted image generating means for determining the number of filtering pixels depending on said complexity information for each of the plurality of blocks on basis of a predetermined rule, wherein said filtering pixel is said interpolated pixel which have pixel values produced by applying the low-pass filter having the narrower spectral band-pass in low frequency band of said two low-pass filters to neighborhood integer pixels. generating the predicted image by using the prediction reference image to which filtering pixels are provided in accordance with the complexity information on the basis of a predetermined rule which increases the number of the filtering pixels which have pixel values produced by applying a low-pass filter of which spectral band pass in low frequency band is narrow among a plurality of low pass filters with different high frequency cutoff characteristics to neighborhood integer pixels.

2. (Currently Amended) A video encoding method including a motion compensation prediction step in which motion compensation prediction means ~~generates a predicted image of a coding target frame by dividing the~~ divides a coding target frame into a plurality of blocks,

generates~~[[ing]]~~ a prediction reference image that are formed by providing interpolated pixels which are produced by interpolation between integer pixels of a reference frame ~~from integer neighborhood pixels~~ in a predetermined region of the ~~[[a]]~~ reference frame, and determining a motion vector for the prediction reference image for each of the plurality of blocks,

wherein, in the motion compensation prediction step complexity extraction means extracts complexity information which indicates a degree of complexity of movement from the reference frame for each of the plurality of blocks, and

predicted image generating means determines the number of filtering pixels depending on said complexity information for each of the plurality of blocks on basis of a predetermined rule, wherein said filtering pixel is said interpolated pixel which have pixel values produced by applying the low-pass filter having the narrower spectral band-pass in low frequency band of two low-pass filters with different high-frequency cutoff characteristics which preliminarily stored to neighbor integer pixels. ~~generates the predicted image by using a prediction reference image to which filtering pixels are provided in accordance with the complexity information extracted by the complexity extraction means on the basis of a predetermined rule which increases the number of the filtering pixels which have pixel values produced by applying a low pass filters of which spectral band-pass in low frequency band is narrow among a plurality of low pass filters with different high frequency cutoff characteristics to neighborhood integer pixels.~~

3. (Currently Amended) The video encoding method according to claim 2, wherein the complexity extraction means uses an absolute value of a differential motion vector of a block neighboring ~~surrounding~~ the block for which the complexity information is to be extracted as the complexity information.

4. (Currently Amended) The video encoding method according to claim 2 further comprising conversion step in which conversion means converts predicted residual difference image produced by calculating a difference between the coding target frame and the predicted image into a set of coefficients on the basis of a predetermined conversion rule,

wherein the complexity extraction means use the numbers of non-zero coefficients among the coefficients in a block neighboring ~~surrounding~~ the blocks for which the complexity information is to be extracted as the complexity information.

5. (Original) The video encoding method according to claim 2, wherein the complexity extraction means uses an absolute value of a differential motion vector of the blocks for which complexity information is to be extracted as the complexity information.

6. (Currently Amended) A computer readable medium having a video encoding program which causes a computer to function as motion compensation prediction means for ~~generating a predicted image of a coding target frame by dividing [[the]]a coding target frame~~ into a plurality of blocks, generating a prediction reference image that are formed by providing interpolated pixels which are produced by interpolation between integer pixels of a reference frame from integer neighborhood pixels in a predetermined region of the [[a]]reference frame, and generating a predicted image of the coding target frame by determining a motion vector for the prediction reference images for each of the plurality of blocks,

the motion compensation prediction means having:

complexity extraction means for extracting complexity information which indicates a degree of complexity of movement between said coding target frame and said from the-reference frame for each of the plurality of blocks; and

filter storing means for preliminarily storing two low-pass filters with different high-frequency cutoff characteristics; and

predicted image generating means for determining the number of filtering pixels depending on said complexity information for each of the plurality of blocks on basis of a predetermined rule, wherein said filtering pixel is said interpolated pixel which have pixel values produced by applying the low-pass filter having the narrower spectral band-pass in low frequency band of said two low-pass filters to neighborhood integer pixels. ~~generating the predicted image by using the prediction reference image to which filtering pixels are provided in accordance with the complexity information extracted by the complexity extraction means on the basis of a predetermined rule which increases the number of the filtering pixels which have pixel values produced by applying a low pass filter of which spectral band pass in low frequency band is narrow among a plurality of low pass filters with different high frequency cutoff characteristics to neighborhood integer pixels.~~

7. (Currently Amended) A video decoding apparatus comprising motion

compensation prediction means for ~~generating a prediction reference image that are formed by providing interpolated pixels which are produced by interpolation between integer pixels from integer neighborhood pixels in a predetermined region of a reference frame, and generating a predicted image by dividing a~~[[the]]decoding target frame into a plurality of blocks, generating a prediction reference image that are formed by providing interpolated pixels which are produced by interpolation between integer pixels of a reference frame in a predetermined region of the reference frame and performing motion compensation based on a motion vector included in compression data by using the prediction reference image,

the motion compensation prediction means having:

complexity extraction means for extracting complexity information which indicates a degree of complexity of movement between said coding target frame and said ~~from the reference frame~~ for each of the plurality of blocks;[[and]]

filter storing means for preliminarily storing two low-pass filters with different high-frequency cutoff characteristics; and

predicted image generating means for determining the number of filtering pixels depending on said complexity information for each of the plurality of blocks on basis of a predetermined rule, wherein said filtering pixel is said interpolated pixel which have pixel values produced by applying the low-pass filter having the narrower spectral band-pass in low frequency band of said two low-pass filters to neighborhood integer pixels. generating the predicted image by using the prediction reference image to which filtering pixels are provided in accordance with the complexity information on the basis of a predetermined rule which increases the number of the filtering pixels which have pixel values produced by applying a low pass filter of which spectral band pass in low frequency band is narrow among a plurality of low pass filters with different high frequency cutoff characteristics to neighborhood integer pixels.

8. (Currently Amended) A video decoding method including motion compensation prediction step in which motion compensation prediction means ~~generates a prediction reference image that are formed by providing interpolated pixels which are produced by interpolation between integer pixels from integer neighborhood pixels in a predetermined region of a reference frame, and generates a predicted image by dividing the~~ divides a decoding target frame into a plurality of blocks, generates a prediction reference image that are formed by providing interpolated pixels which are produced by interpolation between integer pixels of a reference

frame in a predetermined region of the reference frame and performs[[ing]] motion compensation based on a motion vector included in compression data by using the prediction reference image,

wherein, in the motion compensation prediction step, complexity extraction means extracts complexity information which indicates a degree of complexity of movement between said coding target frame and said from the reference frame for each of the plurality of blocks, and

predicted image generating means determines the number of filtering pixels depending on said complexity information for each of the plurality of blocks on basis of a predetermined rule, wherein said filtering pixel is said interpolated pixel which have pixel values produced by applying the low-pass filter having the narrower spectral band-pass in low frequency band of two low-pass filters with different high-frequency cutoff characteristics which preliminarily stored to neighborhood integer pixels. ~~generates the predicted image by using the prediction reference image to which filtering pixels are provided in accordance with the complexity information extracted by the complexity extraction means on the basis of a predetermined rule which increases the number of the filtering pixels which have pixel values produced by applying a low pass filter of which spectral band pass in low frequency band is narrow among a plurality of low pass filters with different high frequency cutoff characteristics to neighborhood integer pixels.~~

9. (Currently Amended) The video decoding method according to claim 8, wherein the complexity extraction means uses an absolute value of a differential motion vector of a block neighboring surrounding the block for which the complexity information is to be extracted as the complexity information.

10. (Currently Amended) The video decoding method according to claim 8 further including decoding step in which decoding means decodes compression data including compression codes which are generated by converting predicted residual difference image produced by calculating a difference between the decoding target frame and the predicted image into a set of coefficients on the basis of a predetermined conversion rule and encoding the set of coefficients,

wherein the complexity extraction means uses the numbers of non-zero coefficients among the coefficients in a block neighboring surrounding the blocks for which the complexity information is to be extracted as the complexity information.

11. (Original) The video decoding method according to claim 8, wherein the complexity extraction means uses an absolute value of a differential motion vector of the blocks for which complexity information is to be extracted as the complexity information.

12. (Currently Amended) ~~[[The]]~~ A computer readable medium having a video decoding program which causes a computer to function as motion compensation prediction means for generating a prediction reference image that are formed by providing interpolated pixels which are produced by interpolation between integer pixels from integer neighborhood pixels in a predetermined region of a reference frame, and generating a predicted image by dividing a ~~[[the]]~~ decoding target frame into a plurality of blocks, generating a prediction reference image that are formed by providing interpolated pixels which are produced by interpolation between integer pixels of a reference frame in a predetermined region of the reference frame and performing motion compensation based on a motion vector included in compression data by using the prediction reference image,

the motion compensation prediction means having:

complexity extraction means for extracting complexity information which indicates a degree of complexity of movement between said coding target frame and said ~~from the reference frame~~ for each of the plurality of blocks; ~~[[and]]~~

filter storing means for preliminarily storing two low-pass filters with different high-frequency cutoff characteristics; and

predicted image generating means for determining the number of filtering pixels depending on said complexity information for each of the plurality of blocks on basis of a predetermined rule, wherein said filtering pixel is said interpolated pixel which have pixel values produced by applying the low-pass filter having the narrower spectral band-pass in low frequency band of said two low-pass filters to neighborhood integer pixels, generating the predicted image by using the prediction reference image to which filtering pixels are provided in accordance with the complexity information extracted by the complexity extraction means on the basis of a predetermined rule which increases the number of the filtering pixels which have pixel

~~values produced by applying a low-pass filter of which spectral band-pass in low frequency band is narrow among a plurality of low-pass filters with different high-frequency cutoff characteristics to neighborhood integer pixels.~~